

# Progress since last Presentation

## 11/05/2016

- MoU discussion continues with ALICE/ITS
  - LANL “Express of Interest” submitted in early October and reviewed by ALICE
  - Associate Membership expected after ALICE Collaboration Board Meeting next week (11/11)
  - Luciao/ALICE working on Cost & Schedule of sPHENIX “MoU”
  - Walt and Ming visit ALICE next week
    - MoU and procurements of R&D test stand etc.
- Continue building collaboration
  - More new members
- A separate MIE idea being explored
  - A small group meeting 10/21
  - Visit MIT/Bates 10/27
  - A near term plan developed

# Possible Additional Collaborations

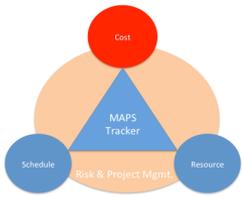
- Czech Group (PHENIX, FVTX )
  - Expressed interest - M. Finger/Mike Finger
  - possible engineering and student support
  - A meeting w/ Ming and Walt scheduled next week at CERN, Nov. 10-15
- China Central Normal Univ. (CCNU, ALICE/ITS 5<sup>th</sup> layer)
  - Expressed interest and possible collaboration on sPHENIX MAPS tracker - Nu Xu
  - Cesar visited CCNU ITS/MAPS labs
  - Many good students already at ALICE/CERN
  - Could help on assembly and testing etc.

# A Separate MIE Proposal for the sPHENIX MAPS Inner Tracker?

- This idea of a separate MIE has been brought up and discussed at several meetings recently
- sPHENIX collaboration proposed “cost reduced” baseline configurations, (I) & (II).
  - Still waiting for decisions/inputs from ALD
  - **In both scenarios, we need MAPS!**
- MAPS is considered by BNL ALD to have the best chance to get additional fund for sPHENIX:
  - With strong consortium of outside institutions (LANL+MIT+LBNL? + UT..), thus there is a strong push/desire from ALD/sPHENIX project office to get a separate MIE for MAPS

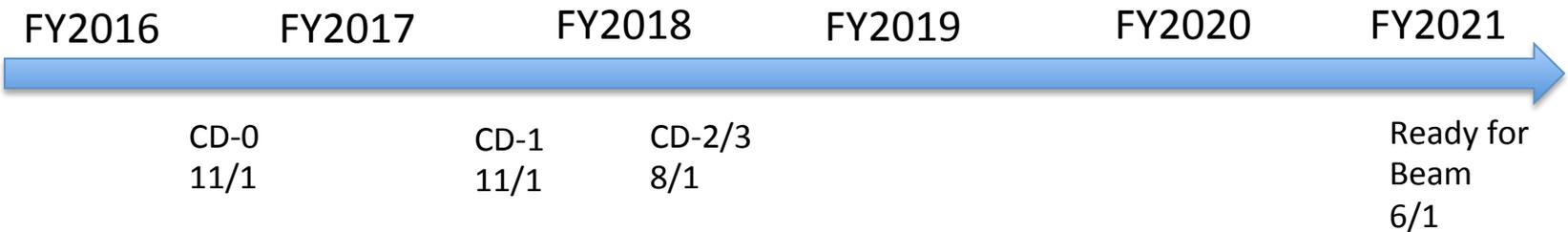
# Challenges of a new MIE

- What do we know from DOE?
  - From what ALD described, DOE (Jehanne and Tim) thought this was a good idea but it is too early to say more than that.
  - Not very clear DOE will be ready to provide \$\$ for this, and also the timeline given the 2-year Federal Budget Cycle even if “mission need” approved --- earliest MIE fund FY20
- The separate MAPS MIE timeline needs to be tied to the ALICE/ITS production and also the sPHENIX schedules
  - ALICE/ITS production ends summer 2018
  - The early funding opportunity from normal MIE ~10/2019, a special case must be made to meet the ALICE/ITS production schedule
- Potential high impacts on the sPHENIX-ALICE “MoU”
  - Resources, lab space and man power
  - Schedules



From Sep. 2016  
Tracker Review

# Project Task and Timeline

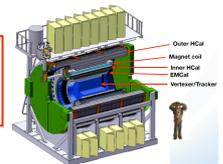
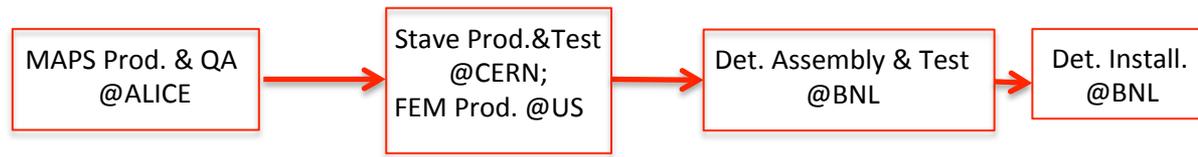


Readout R&D  
Mech. design  
@LANL/ALICE

Mech. Integr.  
& Prototype  
@BNL/LANL

## Key R&D

## Production



+2%

+50%

MoU w/ ALICE: 12/2016  
To produce staves, frames and FEMs

We need \$\$  
here to start!

FY20:  
MIE Fund  
available?

Some intermediate  
solutions needed to  
fill the gap!

# Had a Small Group Meeting on 10/21/2016

Ed, Dave M, Gunther and Ming

## 1. High level sPHENIX-ALICE “Agreement”:

“The document that we intend to have both CERN and DOE sign agreeing to cooperate on MAPS development for sPHENIX, will not be a Memorandum of Understanding, but rather an agreement to collaborate, an agreement to provide resources, or something similar. “ from Ed.

2. ALD plans to work on sPHENIX-ALICE Agreement with DOE and sPHENIX management, willing to go to CERN for negotiation etc.

3. >\$2M MIE as an individual federal budget item, there could be some flexibilities, we try to work out MAPS plan first then deal with this later

4. Develop a pre-proposal (a draft by 12/15/2016 sPHENIX collaboration meeting),  
-- identify the timeline of M&S fund and manpower needs to match ALCIE/ITS and sPHENIX schedules

--- > starting from Cost & Schedule documents we already have

**5. To get all interested parties involved in the pre-proposal writing**

6. Gunther will try to arrange a meeting with MIT folks on 27<sup>th</sup> to discuss MAPS involvement

# sPHENIX/MAPS MIE Discussion (Cont.)

- sPHENIX/MAPS discussion at MIT, 10/27/16, many attended
  - Gunther, Bolek W., Yen-Jie L, Bob R., Richard M., Bolek W. ,
  - Bates Engineers Jason Besuille, James Kelsey.
  - Dave M., John H, Ed dialed in
  - Cesar and Ming
- Discussed MIT's interest and responsibility
  - Major tasks to lead
    - Mechanical system integration
    - Assembly and system test
  - MIT Physics and Bates Engineering Group
    - excellent match to the capabilities
  - Resource and timeline
    - Engineers and Techs
    - Students and postdocs

# A Near Term Plan

- Consider a separate MIE proposal for MAPS
  - Feasibility, start communication with DOE
  - **Have a pre-proposal soon, first draft by Dec 15**
    - Identify tasks, resources and timeline
    - First full doc by Jan 2017, to be ready for discussions with DOE
- Invite all interested parties to join the pre-proposal writing
  - A draft: ~15 pages
  - Update Resource, Cost and Schedules
  - More discussion at Dec. collaboration meeting

# Note: a Typical MIE Timeline

- Submitted and reviewed in FY17, establish DOE “mission need”
- Federal budget request by DOE in Feb 2018,
- Fund available FY20 for construction
- **Early construction fund needed by mid 2018**
  - Produce MAPS chips and staves following ALICE/ITS production at CERN
  - About \$1M, external funding opportunities?